

Rich Fellingner

To: packet-radio@ucsd.edu

In article <dmcreyno-110693082520@134.5.142.4> dmcreyno@hercii.lasc.lockheed.com
(David McReynolds) writes:

>> 3. If I want full duplex, do I need 2 antennas at each end or can
>> one serve as a bidirectional with 2 separate frequencies used?
>
>By definition full-duplex is the use of 2 frequencies. You don't have 2
>telephone lines coming into you full duplex modem do you?

Well, not exactly. V.32 modems use the same frequency carrier in
both directions, but employ adaptive echo cancellation to avoid
reception of their own outbound carriers.

And also not exactly for RF either. At microwave frequencies, E and H
planes' polarization orientation is easily controlled. We often use
use microwave links that have two outbound channels on the same
carrier frequency, one carrier with vertical polarization, the other
with horizontal polarization.

By its nature, a Gunnplexer is a full duplex device. The local
carrier oscillator is used for injection for the local oscillator.
By offsetting the two ends of the link by 70 MHz, you'll obtain a
70 MHz FM IF output from the Gunnplexer's detector. You can run
this into an off-the-shelf 70 MHz IF system for demodulation. For
penny pinching amateur projects, you can offset the two link ends
by about 100 MHz, then use a plain Jane everyday FM radio for your
demodulator. If you really want to get fancy, you can lock your
Gunnplexer modulation system to the receiver's AFC voltage for full
loop control.

There is a nice Amateur allocation at 10.0 - 10.5 GHz, and
commercially available 10.55 GHz Gunnplexers are easily tuned to
this range by simple adjustment of a tuning slug screw. The
amateur allocation is available to all but Novice license holders.
You can operate there by taking two relatively easy multiple choice
examinations (in the US). The amateur service is limited to
strictly non commercial applications and operators must not operate
in broadcast mode, transmit music, or transmit profane material,
etc.

--

Bill Mayhew NEOUCOM Computer Services Department
Rootstown, OH 44272-9995 USA phone: 216-325-2511
wtm@uhura.neoucom.edu amateur radio 146.58: N8WED/AA

Date: Fri, 11 Jun 1993 15:32:26 GMT
From: swrinde!cs.utexas.edu!math.ohio-state.edu!caen!usenet.cis.ufl.edu!
usenet.ufl.edu!zeno.fit.edu!zach.fit.edu!ree88132@network.UCSD.EDU
Subject: Digital microwave project
To: packet-radio@ucsd.edu

In article <dmcreyno-110693082520@134.5.142.4> dmcreyno@hercii.lasc.lockheed.com
(David McReynolds) writes:

>
>Hey, has anyone got a match?
>
>In article <C8FqJs.1Hr@zeno.fit.edu>, ree88132@zach.fit.edu (Keith Ledig)
>wrote:
>>
>> I am about to embark on a project that involves the use of microwaves
>> to transfer digital data. Not being very experienced in microwave
>> technology I have a few questions to ask the microwave gurus. First,
>> a little background: This project will link two computers together
>> through their serial ports at initially 9600 baud but later at speeds
>> of up to 115K baud. The eventual goal is to use SLIP through this
>> connection to get onto the network. The distance will be approx.
>> 10 to 15 miles.
>>
>> 1. Where is a good place to get cheap microwave components from?
>> 2. What frequencies can be used for this microwave link?
>
>Typically, we use Microwave frequencies for Microwave Links.
>

How about frequencies (ie. 2.125 Ghz, etc)

>> Are there allocated frequencies for such experimentation and
>> do they require a license?
>
>You better believe it! You have to have an operator's license. That
>requires a test. Also, you will have to have an engineering study done.
>Those cost big bucks.

I think you miss my point. I am asking if there are any HAM bands
that are good for digital microwave or experimental bands that the
Govt. has assigned.

>
>
>> 3. If I want full duplex, do I need 2 antennas at each end or can
>> one serve as a bidirectional with 2 separate frequencies used?

>
>By definition full-duplex is the use of 2 frequencies. You don't have 2
>telephone lines coming into you full duplex modem do you?
>

My intent of this question is exactly as stated. Can I use one dish/horn as a transmitter AND a receiver at the same time simultaneously. The reason I ask is because we have a couple horns here that are either a transmitter or a receiver. The diode in the center of the horn does only one job.

>> 6. Has this been done before with personal/amateur setup?
>
>Yeah, I just spent \$50,000 and got mine last week.

Not what I had in mind. I was thinking of a more affordable setup. From the sound of your reply you really have no clue as to what I intend to do.

>> 8. What security considerations are necessary? I will probably want
>> to encrypt/scramble so eavesdroppers can't get system passwords etc.
>> Is there data encryption on a chip available?
>

>Now what good would that be? I got this here data encryption on a chip. Now
>I'm sure no one else is going to buy this same chip. Seriously, given your
>total lack of ignorance and technical expertise I doubt anyone would be
>interested in eavesdropping on any of your conversations.

I take this as your good sense of humor. A data encryption chip that would be considered useful would be one that is programmed so that the method of encryption will vary with each user. It's analogous to a combination lock or key lock with programmable tumblers.

>Are you typical of the student body at Florida Institute of Technology?
>Take your school project elsewhere. We don't do your homework for you in
>this news group.
>

This is not "homework". This is a project that I have initiated and can be more accurately characterized as "research".

>David McReynolds
>Hercules II C-130J
>Integrated Digital Avionics
>Lockheed Aeronautical Systems Company, D/70-D4, Z/0185

>Marietta, Georgia 30063
>
>e-mail dmcreyno@hercii.lasc.lockheed.com
>(404)494-0916

Gee, Lockheed must be a great company to work for. Even the janitors get access to internet.

Date: Fri, 11 Jun 1993 09:00:23 GMT
From: usc!howland.reston.ans.net!agate!doc.ic.ac.uk!uknet!icsbelf!
johna@network.UCSD.EDU
Subject: NOS + Baycom + TNC2
To: packet-radio@ucsd.edu

Hello,

Has anyone been able to connect a Baycom modem and a TNC to a PC running nos ?

I have attempted to do this, but without any success - if anyone has any suggestions I would be grateful.

I am running the Baycom modem with the ax25 driver that allows the Baycom modem to be used with the ftp packet driver interface. It will work fine on its own, but when I try to attach the TNC2 as a second interface, I can only get one of the two interfaces to actually send and receive data.

The TNC2 works fine on its own as well, its only when I mix the two that the problem occurs - most confusing !!!!!

--

John Agnew, | johna@icsbelf.co.uk
ICS Computing Group Ltd, | ...!uknet!icsbelf!johna
Belfast (Northern Ireland) | Gi6IRL@GB7TED.GBR.EU [44.131.15.11]

Date: 11 Jun 1993 12:27:37 GMT
From: sun-barr!news2me.EBay.Sun.COM!seven-up.East.Sun.COM!dr-pepper.East.Sun.COM!
quirp!fmielos@ames.arpa
Subject: Packet Program Suggestions???
To: packet-radio@ucsd.edu

I have a PK232 I'm trying to set up on packet. Being a newbie to this,

anyone have any suggestions/recommendations of any shareware packet programs (DOS or UNIX) I can ftp to control the PK232?

TIA,

Frank - N01E

Date: Fri, 11 Jun 1993 14:59:40 GMT
From: pa.dec.com!nntpd2.cxo.dec.com!nntpd.lkg.dec.com!peavax.mlo.dec.com!
psdvax.enet.dec.com!hitz@decwrl.dec.com
Subject: Packet Program Suggestions???
To: packet-radio@ucsd.edu

I have tried a number of comm programs (\$\$\$) to control the PK232 and find that none of them hold a candle to good old fashioned KERMIT. In order to use KERMIT, you will need to be familiar with the PK232 commands, but when you are done, you have very robust, 'do it all' software package.

KERMIT and information on KERMIT is available from anonymous FTP via:

anonymous@kermit.columbia.edu

and more the READ.ME file to start.

Contact me via EMAIL if you (or anyone else) desire further dialogue.

73 de George, W1DA

Date: Fri, 11 Jun 1993 15:32:00 GMT
From: swrinde!emory!kd4nc!n4tii@network.UCSD.EDU
Subject: PK-232 DCD open squelch mod wanted
To: packet-radio@ucsd.edu

steve@zero.com (Steve Urich) writes:

> I use my pk-88s with the squelch open all the time without a DCD
> mod. You have to set the volume just right so the DCD light will
> blink on and off from the hash noise with the squelch off. I use
> this technique with the tncs in KISS mode. Works great!

> I can now decode packets that had short delays where as I couldn't
> before with the squelch up.

OK, Steve, I'll give it a try....if it doesn't work, the guy from
TAPR left me some good info to get a state machine dcd mod for it.
First, I need to get the thing fixed.....my CON led stays on all the time.
I don't know why it does it...and it isn't 'that' much of an inconvenience..

Later.

John

n4tii%kd4nc.uucp@gatech.edu

> Steve

>--

>|Stephen Urich| Internet:steve@zero.com |"Cattle mutilations |
>|NIC: SU2 | UUCP:uunet!beyonet!steve |are up!" --Sneakers |
>|ARS: WB3FTP | Packet:WB3FTP@WB3FTP.#EPA.PA.USA.NOAM |ax25<->PBBS<->IPGATE|
>|Bensalem, PA |Radio:wb3ftp@wb3ftp.ampr.org[44.80.8.44]|TCP/IP-FTP-SMTP-UNIX|

Date: Fri, 11 Jun 1993 16:20:39 GMT
From: spsgate!mogate!newsgate!news@uunet.uu.net
Subject: re: using a Sound Blaster board as a TNC
To: packet-radio@ucsd.edu

In article <19930611.052806.kf5mg@vnet.ibm.com> kf5mg@iinus1.ibm.com (Jack
Snodgrass) writes:

> Does anyone know what issue of what magazine had the blurb about
> doing SSTV using a SB board? Has anyone contacted the program's author
> to discuss doing something similar with packet instead of SSTV. Thanks.
>

I read it in the June issue of QEX (or was it the May issue?). At the end
of the article the author says that a program for packet is a possibility,
if there is sufficient interest and if he has the time.

Why not just go buy a used TNC? Good ones (PK-88, KPC-3, MFJ1270) can
often be found for \$50-75. Writing a program for a SoundBlaster might be
an interesting exercise, but sure sounds like a lot of work.

My \$0.02 worth.

73.... Mark AA7TA

Date: 11 Jun 93 10:28:16 EST

From: usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!bgsuvax!
uoft02.utoledo.edu!aschlie@network.UCSD.EDU
Subject: TCp/IP FAQ?!?!
To: packet-radio@ucsd.edu

Hello

I am intersted in getting a tcpip packet station setup. I want to know
if I can get the software on the net with instructions that will tell
me what all I need to do to complete the job.

Thanks & 73's

Tony N8XJA

Date: Fri, 11 Jun 1993 10:45:57 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!usc!
elroy.jpl.nasa.gov!swrinde!dptspd!news@network.UCSD.EDU
Subject: TCp/IP FAQ?!?!
To: packet-radio@ucsd.edu

Tony..

FAQ's, executables, docs, and lotsa goodies are posted for anonymous ftp
access at ucsd.edu. look in /hamradio/packet/tcpip this collection is very
large and covers most all platforms out there today

* Jack Spitznagel * As a curmudgeon, I speak for *
* Internet: jks@giskard.uthscsa.edu * no man, everyman, and my *
* AMPRNet: kd4iz@kd4iz.ampr.org * opinions are none of your *
* CIS: 76044,476 * business. Those I will gladly *
* Tel: (210) 567-6616 * share. All else is random. *
* Foot: 29.41'N 98.38'W * (C) 1993 *

Date: Fri, 11 Jun 1993 17:42:01 GMT
From: usc!howland.reston.ans.net!noc.near.net!squam.banyan.com!banyan.com!
dts@network.UCSD.EDU
Subject: using a Sound Blaster board as a TNC
To: packet-radio@ucsd.edu

There was an article in QEX, May issue? Maybe the esteemed QEX editor will jump
in here and give some info.

— —

Daniel Senie
Banyan Systems, Inc.
508-898-1188

Internet: dts@banyan.com
Compuserve: 74176,1347
Packet Radio: N1JEB@WA1PHY.MA

Date: Fri, 11 Jun 1993 09:40:18 GMT
From: swrinde!dptspd!news@network.UCSD.EDU
Subject: Using NOS 2.0m TCP/IP package
To: packet-radio@ucsd.edu

```
In <1993Jun10.210116.14270@netcon.smc.edu> news@netcon.smc.edu (UseNet
Administrator) writes:
> I am in need of guidance in the proper setup of my packet station for
> NOS version 2.0m.
> So far I have been able to set up the statio, get my ip number, ping
> other stations, connect to other stations as long as I provide the
> IP address number.
> What I need help with is setting up the domain files, the ftp user files,
> and the mail forwarding parameters so that the system will "automagically"
> look up the correct station, forward mail, ect....
> I you have any example files, and where in the /nos directory structure
> they go, please email me at the above address.. Thanks and 73's
>
>
```

--

```
*****
* Jack Spitznagel                      * As a curmudgeon, I speak for *
* Internet: jks@giskard.uthscsa.edu    * no man, everyman, and my      *
* AMPRNet: kd4iz@kd4iz.ampr.org        * opinions are none of your    *
* CIS: 76044,476                       * business. Those I will gladly *
* Tel: (210) 567-6616                  * share. All else is random.    *
* Foot: 29.41'N 98.38'W                * (C) 1993                     *
*****
```

Date: Fri, 11 Jun 1993 10:13:02 GMT
From: usc!cs.utexas.edu!swrindle!dptspd!news@network.UCSD.EDU
Subject: Using NOS 2.0m TCP/IP package
To: packet-radio@ucsd.edu

Sorry to all for the duplication.... flying fingers got me!

```
> In <1993Jun10.210116.14270@netcon.smc.edu> news@netcon.smc.edu (UseNet Adminis
> > I am in need of guidance in the proper setup of my packet station for
> > NOS version 2.0m.
<stuff deleted>
> > What I need help with is setting up the domain files, the ftp user files,
> > and the mail forwarding parameters so that the system will "automagically"
> > look up the correct station, forward mail, ect....
```

If you are using a "connected" machine:

You need to add the lines:

```
domain addserver [132.239.1.1] ucsd.edu
route add default eth0 mirrorshades.ucsd.edu
    #assume eth0 is your ethernet port
route add [44.xx.xx/24] ax0 (your local tcp/ip AX.25 router address)
    #assume ax0 is your TNC port
    #assume 44.xx.xx/24 is your local subnet--
    #like mine is 44.76.2/24 for San Antonio
```

to your autoexec.nos file.

ucsd.edu is the authoritative DNS for all of ampr.org and mirrorshades is the "super-router" for ampr.org--- you will be able to get to any "connected" ampr.org subnet using this set up.

If you are not connected, you must build a file called domain.txt in your \nos subdirectory that is of the form:

```
w6aaa.ampr.org IN      A      44.xxx.yyy.001
w6aab.ampr.org IN      A      44.xxx.yyy.002
etc. etc.
```

for all members of your local subnet. Note that if you are connected, this file will be created and grow but for some reason does not delete "expired" entries.... You ought to keep a basic file around to use as a fresh start every time you reboot. (I used to do this in the startup batch file...)

There are lotsa good DOC files on UCSD.EDU for anonymous download on how-to-do NOS setup.... (/hamradio/packet/tcpip/docs and in specific versions subdirs as well)

Good luck!

```
*****
* Jack Spitznagel                * As a curmudgeon, I speak for *
* Internet: jks@giskard.uthscsa.edu * no man, everyman, and my      *
```

```

* AMPRNet:  kd4iz@kd4iz.ampr.org      * opinions are none of your      *
* CIS:       76044,476                * business. Those I will gladly *
* Tel:       (210) 567-6616           * share. All else is random.    *
* Foot:      29.41'N 98.38'W          * (C) 1993                      *
*****

```

Date: Fri, 11 Jun 1993 17:20:42 GMT
 From: clarkson!news@uunet.uu.net
 Subject: Where can I ftp TheNet?
 To: packet-radio@ucsd.edu

Where can I ftp the latest TheNet? I think there is a 2.10
 but I don't really know for sure..

I know xli is out but I can't it...

I have checked ucsd.edu for both but I can't find it... thanks!

--

	rob@sun.soe.clarkson.edu			
Rob Logan	AMA	----- -----	ARRL	n2qcn@k2cc-2.ampr.org
Clarkson ERC	IRCHA	*>=====[_]L)	EAA	AirBorn
Potsdam, NY 13699	PRA	- '- '-	PADI	USSA

Date: 11 Jun 93 15:57:38 GMT
 From: news-mail-gateway@ucsd.edu
 Subject: WWV on Telephone
 To: packet-radio@ucsd.edu

Someone in the recent past asked if time sources like WWV
 was available on a telephone dial-in basis. Check these
 out:

WWV - Anchorage AK <Elmendorf AFB> - 907-552-3553
 WWV - Austin TX <Bergstrom AFB> - 512-369-3303
 WWV - Lompoc CA <Vandenburg AFB> - 805-866-3796

Master Clock - Wash DC <Naval Observatory>, 202-653-1800
 Master Clock - Wash DC <Naval Observatory>, 202-653-1920

jd..k1zat

Date: 11 Jun 93 14:14:18 GMT
From: swrinde!gatech!howland.reston.ans.net!agate!doc.ic.ac.uk!pipex!uknet!acorn!
agodwin@network.UCSD.EDU
To: packet-radio@ucsd.edu

References <iLPw5B6w165w@opus-ovh.spk.wa.us>, <C8FDKn.1oq@freenet.carleton.ca>,
<1993Jun10.223014.14345@sol.ctr.columbia.edu>p
Subject : Re: FAQ

In article <1993Jun10.223014.14345@sol.ctr.columbia.edu> sjg@phlim.ph.kcl.ac.uk
(Simon Gornall) writes:

>Come on people, is there an FAQ or not...
>
>(8 hours isn't a long time on usenet I know, but here I was all
>excited at taking home an answer today)
>
>Simon. (hoping for an answer in the near(ish) future)....
>--

You'll have to sort your mail address out first .. you have two in your
posts's heading,

From: sjg@phlim.ph.kcl.ac.uk (Simon Gornall)
and
X-Posted-From: phlem.ph.kcl.ac.uk

Both of these produce an error report from ben.uknet.ac.uk of the form :

Your message was not delivered to sjg@phlem.ph.kcl.ac.uk
for the following reason:
Unknown Address
Blue book transfer to kcl.ac.uk failed (permanent error code):
"Got a QR(21)
Unknown username sjg at site UK.AC.KCL.CC.OAK,
mail was not delivered."

The FAQ was posted recently with an expiry date of 6/26/93, so it should
really be still on the spool at your site. If not, there's the following
help in the FAQ itself (I'd rather not repost it all):

The Packet Radio FAQ's will be posted on a monthly basis to
rec.radio.amateur.packet. The current version of this document is
available via anonymous FTP at ftp.cs.buffalo.edu.

Many FAQ's, including this one, are available on the archive site rtfm.mit.edu in the directory pub/usenet/news.answers. The name under which a FAQ is archived appears in the Archive-Name: line at the top of the article. This FAQ is archived as radio/packet-faq.

There is also a mail server on rtfm.mit.edu, which can be addressed as mail-server@rtfm.mit.edu. For details on how to operate this server, send a message to that address with the word "help" in the BODY of the message.

-adrian

End of Packet-Radio Digest V93 #164
